

AMENDMENTS TO THE CLAIMS:

Please amend claim 1 as follows:

Claim 1 (presently amended) 1. A dental curing light comprising:  
a wand adapted to be grasped by a human hand,  
a wall outlet power adapter for converting AC power to DC power usable by the dental curing light,  
electronic control circuitry for controlling operation of the curing light located within said wand,  
a light module attached to said wand,  
said light module including an elongate heat sink with a proximal end and a distal end, said proximal end being proximate said wand, said elongate heat sink having a longitudinal axis,  
a mounting platform located at said elongate heat sink distal end, said mounting platform being adapted to have a light emitting semiconductor device mounted thereon, and  
a light emitting semiconductor device mounted on said mounting platform by use of heat conductive and light reflective adhesive;  
wherein said mounting platform is oriented so that when a light emitting semiconductor device is mounted on it, light emitted by the light emitting semiconductor device will be emitted at an angle of from about 30 degrees to about 150 degrees to said elongate heat sink longitudinal axis.

Claim 5 (original) 5. A dental curing light as recited in claim 1 wherein said mounting platform is oriented so that when a light emitting semiconductor device is mounted on it, light emitted by the light emitting semiconductor device will be emitted generally orthogonal to said elongate heat sink longitudinal axis.

Please cancel claim 6 without prejudice.

Claim 6 (canceled)

Please amend claim 7 as follows:

Claim 7 (presently amended)            7.        A dental curing light comprising:  
a wand adapted to be grasped by a human hand,  
a battery power source located within said wand,  
electronic control circuitry located within said wand,  
a light module attached to said wand,  
said light module including an elongate heat sink with a proximal end and a distal end,  
said proximal end being proximate said wand, said elongate heat sink having a longitudinal axis,  
and elongate heat sink being adapted to draw heat away from a semiconductor located at said  
elongate heat sink distal end,  
a mounting platform located at said elongate heat sink distal end,  
a primary heat sink mounted to said mounting platform, and  
a light emitting semiconductor device affixed to said primary heat sink;  
wherein said mounting platform is oriented so that when a light emitting semiconductor device is  
mounted on it, light emitted by the light emitting semiconductor device will be emitted at an  
angle of from about 30 degrees to about 150 degrees to said elongate heat sink longitudinal  
axis.

Please cancel claim 11 without prejudice.

Claim 11 (cancelled)

Please amend claim 18 as follows:

Claim 18 (presently amended)            18.        A dental curing light comprising:  
a wand designed to be grasped by a human hand,  
controls for initiating and terminating light transmission by the dental curing light,  
circuitry in electrical connection with said controls,

a power source for powering the dental curing light,  
a light source, the light source including:  
    a light emitting semiconductor device,  
    a primary heat sink to which said light emitting semiconductor device is affixed,  
    an elongate secondary heat sink to which said primary heat sink is affixed,  
    said primary heat sink being adapted to draw heat away from said light emitting  
semiconductor device, said elongate secondary heat sink being adapted to draw heat away  
from said primary heat sink and to dissipate said heat;  
    wherein said elongate secondary heat sink has a longitudinal axis, and  
    wherein at least some of the light emitted by said light source travels in a direction that is  
not parallel to said elongate heat sink longitudinal axis.

Please cancel claim 19 without prejudice.

Claim 19 (cancelled).

Please cancel claim 20 without prejudice.

Claim 20 (cancelled).

Please amend claim 21 as follows:

Claim 21 (presently amended)      21.    A dental curing light comprising:  
    a wand designed to be grasped by a human hand,  
    controls for initiating and terminating light transmission by the dental curing light,  
    circuitry in electrical connection with said controls,  
    a light source, the light source including:  
        a light emitting semiconductor device,  
        a primary heat sink to which said light emitting semiconductor device is affixed,  
        an elongate secondary heat sink having a proximal end and a distal end,

a mounting platform located at said secondary heat sink distal end, said primary heat sink being affixed to said mounting platform,

said primary heat sink being adapted to draw heat away from said light emitting semiconductor device, said elongate secondary heat sink being adapted to draw heat away from said primary heat sink and to dissipate said heat;

wherein said elongate secondary heat sink has a longitudinal axis between said proximal and distal ends, and

wherein said mounting platform is oriented so that at least some of the light emitted by said light emitting semiconductor device travels in a direction that represents an angle in the range of 30 to 150 degrees with said elongate heat sink longitudinal axis.

Please amend claim 22 as follows:

Claim 22 (presently amended)      22.      A dental curing light comprising:

a light module,

an elongate heat sink located in said light module, said elongate heat sink having a proximal end, a distal end and a longitudinal axis therebetween, said elongate heat sink being part of said light module,

a mounting platform located at said elongate heat sink distal end,

a primary heat sink mounted to said mounting platform, said primary heat sink being smaller in overall volume than said elongate heat sink,

a well located on said primary heat sink,

a light emitting semiconductor device mounted in said well of said primary heat sink;

wherein at least some of the light emitted by said semiconductor device travels in a direction that represents an angle in the range of 30 to 150 degrees with said longitudinal axis.

Please cancel claim 23 without prejudice.

Claim 23 (cancelled).

Please add new claim 24:

Claim 24 (newly added)      24.      A dental curing light comprising:  
a light module,  
a heat sink having a longitudinal axis,  
said heat sink and said light module being in heat conductive communication with each other so that heat generated by said light module may be drawn away from it by said heat sink,  
wherein at least some of the light emitted by said light source travels in a linear direction that forms an angle with said longitudinal axis, said angle being in the range of 30 to 150 degrees.

LISTING OF CLAIMS:

Claim 1 (presently amended) 1. A dental curing light comprising:  
a wand adapted to be grasped by a human hand,  
a wall outlet power adapter for converting AC power to DC power usable by the dental curing light,  
electronic control circuitry for controlling operation of the curing light located within said wand,  
a light module attached to said wand,  
said light module including an elongate heat sink with a proximal end and a distal end, said proximal end being proximate said wand, said elongate heat sink having a longitudinal axis,  
a mounting platform located at said elongate heat sink distal end, said mounting platform being adapted to have a light emitting semiconductor device mounted thereon, and  
a light emitting semiconductor device mounted on said mounting platform by use of heat conductive and light reflective adhesive;  
wherein said mounting platform is oriented so that when a light emitting semiconductor device is mounted on it, light emitted by the light emitting semiconductor device will be emitted at an angle of from about 30 degrees to about 150 degrees to said elongate heat sink longitudinal axis.

Claim 2 (original) 2. A dental curing light as recited in claim 1 wherein said light emitting semiconductor device is selected from the group consisting of light emitting diode chips, laser chips, light emitting diode chip array, diode laser chips, diode laser chip array, surface emitting laser chips, edge emitting laser chips, and VCSEL chips.

Claim 3 (original) 3. A dental curing light as recited in claim 1 wherein said light emitting semiconductor device utilizes a driving current of not more than about 350 milliamps.

Claim 4 (original) 4. A dental curing light as recited in claim 1 further comprising at least one air vent on said wand.

Claim 5 (original)      5.      A dental curing light as recited in claim 1 wherein said mounting platform is oriented so that when a light emitting semiconductor device is mounted on it, light emitted by the light emitting semiconductor device will be emitted generally orthogonal to said elongate heat sink longitudinal axis.

Claim 6 (canceled)

Claim 7 (presently amended)      7.      A dental curing light comprising:  
a wand adapted to be grasped by a human hand,  
a battery power source located within said wand,  
electronic control circuitry located within said wand,  
a light module attached to said wand,  
said light module including an elongate heat sink with a proximal end and a distal end,  
said proximal end being proximate said wand, said elongate heat sink having a longitudinal axis,  
and elongate heat sink being adapted to draw heat away from a semiconductor located at said elongate heat sink distal end,  
a mounting platform located at said elongate heat sink distal end,  
a primary heat sink mounted to said mounting platform, and  
a light emitting semiconductor device affixed to said primary heat sink;  
wherein said mounting platform is oriented so that when a light emitting semiconductor device is mounted on it, light emitted by the light emitting semiconductor device will be emitted at an angle of from about 30 degrees to about 150 degrees to said elongate heat sink longitudinal axis.

Claim 8 (original)      8.      A dental curing light as recited in claim 7 wherein said light emitting semiconductor device is selected from the group consisting of light emitting diode chips, laser chips, light emitting diode chip array, diode laser chips, diode laser chip array, surface emitting laser chips, edge emitting laser chips, and VCSEL chips.

Claim 9 (original) 9. A dental curing light as recited in claim 7 further comprising at least one air vent on said wand.

Claim 10 (original) 10. A dental curing light as recited in claim 7 wherein said mounting platform is oriented so that when a light emitting semiconductor device is mounted on it, light emitted by the light emitting semiconductor device will be emitted generally orthogonal to said elongate heat sink longitudinal axis.

Claim 11 (cancelled)

Claim 12 (original) 12. A dental curing light as recited in claim 7 wherein said mounting platform is oriented so that when a light emitting semiconductor device is mounted on it, light emitted by the light emitting semiconductor device will be emitted generally orthogonal to said elongate heat sink longitudinal axis.

Claim 13 (original) 13. A dental curing light as recited in claim 7 further comprising a well in said primary heat sink, said light emitting semiconductor device being located in said well.

Claim 14 (original) 14. A dental curing light as recited in claim 13 wherein said well includes a light reflective coating on its interior.

Claim 15 (original) 15. A dental curing light as recited in claim 13 wherein said light emitting semiconductor device is affixed to said primary heat sink by use of heat conductive and light reflective adhesive.

Claim 16 (original) 16. A dental curing light as recited in claim 13 further comprising a cover over said light emitting semiconductor device.

Claim 17 (original) 17. A dental curing light as recited in claim 16 wherein said cover is selected from the group consisting of windows and focus lenses.



Claim 18 (presently amended)      18.      A dental curing light comprising:  
a wand designed to be grasped by a human hand,  
controls for initiating and terminating light transmission by the dental curing light,  
circuitry in electrical connection with said controls,  
a power source for powering the dental curing light,  
a light source, the light source including:  
a light emitting semiconductor device,  
a primary heat sink to which said light emitting semiconductor device is affixed,  
an elongate secondary heat sink to which said primary heat sink is affixed,  
said primary heat sink being adapted to draw heat away from said light emitting  
semiconductor device, said elongate secondary heat sink being adapted to draw heat away  
from said primary heat sink and to dissipate said heat;  
wherein said elongate secondary heat sink has a longitudinal axis, and  
wherein at least some of the light emitted by said light source travels in a direction that is  
not parallel to said elongate heat sink longitudinal axis.

Claim 19 (cancelled).

Claim 20 (cancelled).

Claim 21 (presently amended)      21.      A dental curing light comprising:  
a wand designed to be grasped by a human hand,  
controls for initiating and terminating light transmission by the dental curing light,  
circuitry in electrical connection with said controls,  
a light source, the light source including:  
a light emitting semiconductor device,  
a primary heat sink to which said light emitting semiconductor device is affixed,  
an elongate secondary heat sink having a proximal end and a distal end,

a mounting platform located at said secondary heat sink distal end, said primary heat sink being affixed to said mounting platform,

said primary heat sink being adapted to draw heat away from said light emitting semiconductor device, said elongate secondary heat sink being adapted to draw heat away from said primary heat sink and to dissipate said heat;

wherein said elongate secondary heat sink has a longitudinal axis between said proximal and distal ends, and

wherein said mounting platform is oriented so that at least some of the light emitted by said light emitting semiconductor device travels in a direction that represents an angle in the range of 30 to 150 degrees with said elongate heat sink longitudinal axis.

Claim 22 (presently amended)

22. A dental curing light comprising:

a light module,

an elongate heat sink located in said light module, said elongate heat sink having a proximal end, a distal end and a longitudinal axis therebetween, said elongate heat sink being part of said light module,

a mounting platform located at said elongate heat sink distal end,

a primary heat sink mounted to said mounting platform, said primary heat sink being smaller in overall volume than said elongate heat sink,

a well located on said primary heat sink,

a light emitting semiconductor device mounted in said well of said primary heat sink;

wherein at least some of the light emitted by said semiconductor device travels in a direction that represents an angle in the range of 30 to 150 degrees with said longitudinal axis.

Claim 23 (cancelled).

Claim 24 (newly added)

24. A dental curing light comprising:

a light module,

a heat sink having a longitudinal axis,

said heat sink and said light module being in heat conductive communication with each

other so that heat generated by said light module may be drawn away from it by said heat sink,  
wherein at least some of the light emitted by said light source travels in a linear direction  
that forms an angle with said longitudinal axis, said angle being in the range of 30 to 150  
degrees.